REMARKS

This amendment is being filed in response to the non-final Office Action dated October 3, 2008. Claim 20 was cancelled and claims 26-41 were withdrawn. Claims 1-19 and 21-25 are active for examination.

The Office Action rejected claims 1-3, 6, 7, 10, 11, 15, 16, 19, 21 and 22 under 35 U.S.C. §103(a) as being unpatentable over Moon (U.S. Patent 6,405,047) in view of Watters (U.S. Patent 6,230,018). Claims 4, 13 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moon in view of Watters and Janhonen (U.S. Patent 6,023,618). Claims 5, 14 and 23 stood rejected under 35 U.S.C. §103(a) as being unpatentable over Moon in view of Watters and further in view of Havinis (U.S. Patent 6,671,377). The Examiner rejected claims 8, 12 and 17 under 35 U.S.C. §103(a) as being unpatentable over Moon in view of Watters and Patel (U.S. Patent 7,043, 225). Claims 24 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moon in view of Watters, Havinis and Keranen (U.S. Patent 6,681,099). Claim 9 was objected to as being dependent upon a rejected base claim, but the Examiner indicated that claim 9 would be allowable if it is rewritten in independent form.

It is submitted that the rejections are overcome and the objection is addressed in view of remarks presented herein. Favorable reconsideration of the claims is respectfully requested.

The Obviousness rejection of claims 1-3, 6, 7, 10, 11, 15, 16, 19, 21 and 22 is overcome

Claims 1-3, 6, 7, 10, 11, 15, 16, 19, 21 and 22 were rejected as being obvious over the combination of Moon and Watters. The obviousness rejection is overcome because the documents, even if combined, fail to meet the claim limitations: "making a change to the sending timing of said signal pattern from at least one of said base stations; and responsive to the change of the sending timing of the signal pattern, notifying said mobile terminal or station of an altered

reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern."

Claim 1 describes a method for determining a location of a mobile terminal or station based on information related to (1) timing of signals sent from the base stations, (2) positions of the base stations, and (3) timing of the signals received at the mobile terminal or station. The method further includes a step of deliberately changing the sending timing of the signal pattern from the base stations. For instance, the deliberate change may be a reference time offset. The mobile terminal is notified of such deliberate change in the sending timing of the signal pattern. Related discussions can be found in, for example, page 15, first paragraph of the written description.

In contrast, the system described in Moon does not **deliberately *alter*** or ***change*** the timing of **sending** pilot signals or sequences, and **notify** the mobile terminal of such deliberate change in the modified sending timing of the signal pattern.

The Examiner correctly acknowledged that Moon fails to disclose deliberately making a change to the sending timing of said signal pattern from at least one of said base stations; and responsive to the change of the sending timing of the signal pattern, notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern. Page 3, last paragraph of the Office Action.

In various sections, Moon provides descriptions concerning "phase difference information:"

(1) "a phase difference between an arrival time of time of tone signals transmitted form the adjacent base stations and an absolute system time…" (Col. 4, lines 38-40)

(2) "using phase differences information transmitted from the respective adjacent base stations.." (Col. 4, lines 52-53)

(3) "The mobile station 200 can measure the phase difference of each tone signal if it knows an absolute system time at receiving time of the tone signals." (Col. 4, lines 58-60)

(4) "The phase difference is proportional to the difference to the distance between the mobile station 200 and the corresponding base station." (Col. 4, lines 61-62)

(5) "When the mobile station 200 knows the phase difference information of the respective tone signals from the adjacent base stations.." (Col. 4, lines 63-65)

(6) "That is, the mobile station 200 can measure the distances from the adjacent base stations depending on the phase difference information of the respective tone signals" (Col. 5, lines 1-3)

Descriptions (4) specifically describes that "a phase difference is proportional to the distance between the mobile station and the corresponding base station." Accordingly, it is understood that "the phase difference information" in Moon means propagation delay time. It is also evident from Figs. 3 and 5 that the time shifts are caused by natural propagation delays, but not by a deliberate change made by the base stations.

In light of the deficiencies of Moon, the Office intended to rely on Watters. However, Watters, too, fails to disclose the missing limitations and lacks sufficient teaching to alleviate the deficiencies of Moon.

Watters, in various sections (reproduced below), provides descriptions relating to "adjusting" and "synchronization:"

(7) "When a base station is operating out of synchronization, its signal period does not begin at the same instant...(Col. 11, lines 30-32)

(8) [T]he processor can adjust the offset timing generator by an amount necessary to begin the signal period at the same instant as another base stations." (Col. 11, lines 34-37)

(9) "The timing of the base station may then be adjusted 1130 by the amount of the synchronization error…." (Col. 13, lines 23-24)

It is understood from the descriptions that if the base station is operating out of synchronization, its signal period will not begin at the same instant (see Description (7)). Then the offset timing is adjusted by an amount of the synchronization error (see Descriptions (8) and (9)).

Descriptions (1) through (9), it is apparent that the focus of these discussions is on **synchronization** of base stations: Moon purportedly discusses the need for synchronizing the transmission time to absolute system time, and Watters allegedly discusses one of many ways to achieve synchronization. However, these descriptions have nothing to do with determination of a location of a mobile terminal or station.

Therefore, if Moon and Watters were to be combined, the only predictable result is a system that when it determines that synchronization is needed (according to Moon), techniques as discussed in Watters would be utilized to achieve synchronization.

However, the resulting system still fails to disclose "responsive to the change of the sending timing of the signal pattern, notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern," as described in claim 1.

Since the documents, even if combined, fail to meet every limitation of claim 1, the cited documents cannot support a prima facie case of obviousness. Accordingly, claim 1 is patentable.

Claims 2 and 3, directly or indirectly, depend on claim 1 and incorporate every limitation thereof. Therefore, claims 2 and 3 are patentable over the combination of Moon and Watters for at least the same reasons as for claim 1, as well as based on their own merits.

Independent claims 10, 15 and 22 include descriptions related to deliberately making a change to the timing for transmitting signal patterns, and notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern. As discussed earlier relative to claim 1, the combination of Moon and Watters fails to disclose these features. Therefore, claims 10, 15 and 22 and their respective dependent claims 11 and 16 are patentable over Moon and Watters.

Claim 19 describes a method for locating a mobile terminal or station. An ID of the mobile terminal or station, and a request for information on the sending timing of a specific signal pattern transmitted at given intervals from base stations in the vicinity of the mobile terminal or station are transmitted to a base station in a zone in which the mobile terminal or station locates. A location of the mobile terminal or station is determined based on an answer from said base station, and respective receiving timing of the signal pattern from each of said base stations in the vicinity of the mobile terminal or station.

In contrast, Moon uses a phase difference based on phase errors of each tone signals. However, Moon does not measure a location of the mobile terminal or station based on (1) an answer from said base station, and (2) respective receiving timing of the signal pattern from each of said base stations in the vicinity of the mobile terminal or station.

As discussed earlier, the other cited document, Watters, if combined with Moon according to know methods, the only predictable result of the combination is assisting the system in Moon to improve synchronization. However, the combination does not teach measuring a location of the mobile terminal or station based on (1) an answer from said base station, and (2) respective receiving timing of the signal pattern from each of said base stations in the vicinity of the mobile terminal or station, as described in claim 19. Accordingly, claim 19 and its dependent claim 21 are patentable over Moon and Watters.

The Rejection of Claims 5, 14 and 23 Is Overcome

Claims 5, 14 and 23 stood rejected as being unpatentable over Moon in view of Watters and further in view of Havinis.

As discussed earlier, the combination of Moon and Watters fails to disclose features of claim 1 and 10. The other document, Havinis, was cited for its discussions related to encryptions, but does not alleviate the deficiencies of Moon and Watters. Since claims 5 and 14

inherent all the features of claims 1 and 10, respectively, by virtue of their dependencies, claims 5 and 14 are patentable over the combination of Moon, Watters and Havinis for at least the same reasons for claims 1 and 10

Independent claim 23 includes descriptions related to deliberately making a change to the timing for transmitting signal patterns, and notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern. As discussed earlier relative to claim 1 and claims 5 and 14, none of Moon, Watters and Havinis discloses these features. Therefore, claim 23 is patentable over the combination of Moon, Watters and Havinis.

The Rejection of Claims 4, 13 and 18 Is Overcome

Claims 4, 13 and 18 indirectly depend on claims 1, 10 and 15, respectively, and were rejected as being unpatentable over Moon, Watters and Janhonen. As discussed earlier, Moon and Watters, even if combined, fail to disclose features of claim 1, 10 and 15. The other document, Janhonen, was cited for its purported discussion related to updating charging data, but does not alleviate the deficiencies of Moon and Watters. Accordingly, claims 4, 13 and 18 are patentable over the combination of Moon, Watters and Janhonen by virtue of their respective dependencies from claims 4, 13 and 18.

The Obviousness rejection of claims 8, 12 and 17 is overcome

Claims 8, 12 and 17 indirectly depend on claims 1, 10 and 15, respectively, were rejected as being unpatentable over Moon, Watters and Patel. As discussed earlier, Moon and Watters, even if combined, fail to disclose features of claim 1, 10 and 15. The other document, Patel, was cited for its purported discussion related to providing signal patterns on one of different service levels according to an agreement between the owner of the mobile terminal or station and the

administrator of the base stations, but does not alleviate the deficiencies of Moon and Watters. Accordingly, claims 4, 13 and 18 are patentable over the combination of Moon, Watters and Patel.

The Rejection of Claims 24 and 25 Is Overcome

Claims 24 and 25, directly or indirectly, depend on claim 22 and were rejected under 35 U.S.C. §103(a) as being unpatentable over Moon, Watters in view of Keranen. However, as discussed earlier relative to claim 22, the combination of Moon and Watters fails to disclose every limitation of claim 22. Keranen was cited for its alleged discussion related to suing a server to store timing information. The cited sections of Keranen, however, do not alleviate the deficiencies of Moon and Watters. Therefore, Moon, Watters and Keranen, even if combined as suggested by the Office Action, do not meet every limitation of claims 24 and 25 which incorporate features of claim 22. Favorable reconsideration of claims 24 and 25 is respectfully requested.

The Objection to Claim 9 Is Addressed

Claim 9 indirectly depends on claim 1 and incorporates every limitation thereof. As discussed earlier, claim 1 is patentable. Accordingly, claim 9 also is patentable and is in condition for allowance. It is submitted that claim 9 is in appropriate form.

Conclusion

For the reasons given above, Applicants believe that this application is conditioned for allowance and Applicants request that the Examiner give the application favorable consideration and permit it to issue as a patent. However, if the Examiner believes that the application can be put in even better condition for allowance, the Examiner is invited to contact Applicants' representatives listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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